

The Extragalactic Background, the Zodiacal Foreground, and the Integrated Light of Faint Galaxies

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Abstract

Measurements of the extragalactic background light (EBL) are controversial, in large part because they are difficult to understand in the context of current theories of galaxy evolution. In both the optical and NIR bands, the reported EBL is a factor of 3-10 higher than the integrated light from galaxies. The energy in the EBL is comparable to or greater than the energy produced in nucleosynthesis of all known stars. However, theoretical misgivings are not a good reason to discount careful measurements. We propose to measure the background in HST observations as a function of viewing geometry through the zodiacal cloud to assess uncertainties in the models of the zodiacal foreground, and, if these are found to be small, to improve constraints on the EBL. We will also use deep surveys to improve estimates of the integrated light from galaxies.

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